

CLAIMS

What is claimed is:

1. A method for performing network based load balancing of medical image data among a plurality of resources, the method comprising:

monitoring, by a network service, a system parameter associated with each of the plurality of systems indicative of the available capacity of each of the plurality of image archive resources;

receiving, by a network service, medical image data including a task to be performed;

extracting, by the network service, the task from the medical image data

determining, by the network service, the level of complexity of the task to be performed;

selecting, by the network service, one of the plurality of resources to transfer the medical image data using as a selection function the available capacity of each of the resources and the complexity of the task to be performed;

transferring, by the network service, the medical image data to the selected resource.

2. The method of claim 1 wherein the step of selecting comprises selecting the one of the resources having the greatest available capacity relative to the complexity level of the task to be performed.

3. The method of claim 1, wherein the medical image data is formatted as a DICOM message.

4. The method of claim 1, wherein the plurality of resources comprises a plurality of image archive systems.

5. The method of claim 4, wherein the plurality of image archive systems comprises a plurality of Picture Archive System (PACS).

6. The method of claim 5 wherein the parameter is one of the group consisting of the PACS server load, or the PACS storage time.
7. The method of claim 1 wherein, the parameter is one of the group consisting of the resource load, the capacity of the network, or the congestion of the network.
8. The method of claim 1 wherein the resource is a cluster of reporting/reviewing stations.
9. The method of claim 1 wherein the resource is a radiological information system.
10. A method for performing network based load balancing of medical image data among a plurality of resources, the method comprising:
 - assigning, by the network service, a priority level associated with each of the plurality of resources;
 - receiving, by the network service, medical image data including a task to be performed;
 - extracting, by the network service, the task from the medical image data;
 - assigning, by the network service, a priority level to the task;
 - selecting, by the network service one of the plurality of resources to transfer the task to be executed thereby, the selection based on the priority level of the task and priority level of the resource; and
 - transferring, by the network service, the medical image data and the task to the selected resource.
11. The method of claim 10 wherein the medical image data is formatted as a DICOM message.
12. The method of claim 10 wherein the step of selecting comprises selecting the one of the plurality of resources having a priority less than or equal to the priority level of the task.

13. The method of claim 10 wherein the plurality of resources comprises a plurality of image archive systems.
14. The method of claim 13 wherein the plurality of image archive systems comprises a plurality of Picture Archive & Communication Systems (PACS)
15. The method of claim 14 wherein the parameter is one of the group consisting of the PACS server load, or the PACS storage time.
16. The method of claim 10 wherein, the parameter is one of the group consisting of the resource load, the capacity of the network, or the congestion of the network.
17. The method of claim 10 wherein the resource is a cluster of reporting/reviewing stations.
18. The method of claim 10 wherein the resource is a radiological information system.
19. An apparatus for network based load balancing of medical image among a plurality of systems, the apparatus comprising:
 - a network element coupled to a network and configured to send and receive data via the network;
 - a network service coupled to the network element, the network service configured to:
 - monitor a parameter associated with each of the plurality of systems indicative of the available capacity of each of the plurality of image archive resources;
 - receive medical image data including a task to be performed;
 - extract the task from the medical image data
 - determine the level of complexity of the task to be performed;
 - select one of the plurality of resources to transfer the medical image datausing as a selection function the available capacity of each of the resources and the complexity of the task to be performed;

20. The apparatus of claim 19 wherein the network service is operative to select the one of the resources having the greatest available capacity relative to the complexity level of the task to be performed.

21. The apparatus of claim 19, wherein the medical image data is formatted as a DICOM message.

22. The apparatus of claim 19, wherein the plurality of resources comprises a plurality of image archive systems.

23. The apparatus of claim 22, wherein the plurality of image archive systems comprises a plurality of Picture Archive System (PACS).

24. The apparatus of claim 23 wherein the parameter is one of the group consisting of the PACS server load or the PACS storage time.

25. The apparatus of claim 19 wherein the parameter is one of the group consisting of the resource load, the capacity of the network, or the congestion of the network.

26. The apparatus of claim 19 wherein the resource is a cluster of reporting/reviewing stations.

27. The apparatus of claim 19 wherein the resource is a radiological information system.

28. An apparatus for network based load balancing of medical image among a plurality of systems, the apparatus comprising:

a network element coupled to a network and configured to send and receive data via the network;

a network service coupled to the network element, the network service configured to:

assign a priority level associated with each of the plurality of resources;
 receive medical image data including a task to be performed;
 extract the task from the medical image data;
 assign a priority level to the task;
 select one of the plurality of resources to transfer the task to be executed
 thereby, the selection based on the priority level of the task and priority level of the
 resource; and
 transfer the medical image data and the task to the selected resource.

29. The apparatus of claim 28 wherein the medical image data is formatted as a DICOM message.

30. The apparatus of claim 28 wherein the step of selecting comprises selecting the one of the plurality of resources having a priority less than or equal to the priority level of the task.

31. The apparatus of claim 28 wherein the plurality of resources comprises a plurality of image archive systems.

32. The apparatus of claim 31 wherein the plurality of image archive systems comprises a plurality of Picture Archive & Communication Systems (PACS)

33. The apparatus of claim 32 wherein the parameter is one of the group consisting of the PACS server load, or the PACS storage time.

34. The apparatus of claim 28 wherein, the parameter is one of the group consisting of the resource load, the capacity of the network, or the congestion of the network.

35. The apparatus of claim 28 wherein the resource is a cluster of reporting/reviewing stations.

36. The apparatus of claim 28 wherein the resource is a radiological information system.